"What to Measure" Criteria and Case Studies

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I. Possible Criteria for Types of Emission to be Measured

Identifying GHG Emission Source

1. Is the GHG source easily identified and boundary determined? (scope or scale)
2. Is the project applicant in a position to control the emission?

Calculating GHG Emission Source

Measurement Potential

1. How available and credible is the measurement science?
2. Can accurate data for a given source be secured?
3. Is there a clear, simple quantification method?
4. What is the level of accuracy of the current quantification method?
5. Is the boundary of the calculation easily defined/determined? (scope/scale)
6. How applicable are the measurements to logical mitigation measures (convertible to GHG or to other forms of mitigation requirements)
7. How applicable are the measurements to meeting 2020 and 2050 goals? (not yet a SEPA goal or a definition of significance. SEPA should allow you to go beyond existing legal mitigation mandates using substantive SEPA authority)
8. Does the emission category double-count emissions from another SEPA applicant?
9. Could double-counting over-estimate required mitigation by applicant? (Double-counting may occur in two instances: in the process of quantifying emission reductions from GHG projects and when project based emission reductions are counted or used as offsets – more than once.)
10. Does the cost of calculating outweigh the gains?

Points to Consider in Determining What Gets Measured:

a. What gets measured gets managed.

b. If a project does not measure particular source of GHG then should it/ can it use such source as offset mitigation?

c. SEPA checklist GHG mitigation analysis will vary greatly from one proposal to the next.

d. Should the mitigation part be more flexible (broader in possible scope) and include additional GHG emission reporting.

e. The carbon sink part of mitigation (net emissions) is more complex, more speculative, with less definitive science, especially in the agricultural arena. This may require different metrics such as wetland acreage loss with 2:1substitutions or transfer of development rights (TDR) on similar soil and climate types, or afforestation acreage to compensate deforestation on similar soil/climate type. Ecology statewide rollup may be

the place to require net emissions calculations from GHG carbon sinks, with optional use of Ecology models for the SEPA checklist.

f. Should we assume all GHG emissions are adverse impacts (not necessarily significant impacts) that must be disclosed. Then set some reasonable parameters such as readily available, credible and not speculative science.

g. Allow flexibility for going beyond the minimum GHG reporting that Ecology guidance or new Ecology exemption rules prescribe.

II. Options for What Emissions are Measured (i.e., Narrow, Intermediate, Broad)

A. Narrow "In-House" Inventory

1. Emissions directly and measurably attributable to construction and operations that happen within boundaries of the activity examined: VMT in course of work or directly related to the project, equipment use, on-site fuel and energy use, on-site industrial process emissions, on-site land use changes, etc.) that happen within the boundaries of the project examined

Advantages of Narrow

- Easy, fill-in the blank reporting.
- It probably provides the greatest amount of certainty.
- More focus may make evaluation more acceptable for project sponsors and reviewing agencies as the "why we measure" may be more clearly understood.
- Understandable, and more do-able at the project stage.
- Applies to lots of mundane /typical SEPA actions.
- Clear do-able mitigation strategies that can be committed to as permit conditions.
- Easier to understand mitigation sequencing for individual analysis/narrow focus.
- Could limit our initial mandatory analysis to best available and credible science and allow for future updates to model and source data. This may lower the tier and increase future reporting and analysis requirements.

Disadvantages of Narrow

- May not provide most accurate or "fair" picture of a project's impacts or benefits.
- May ignore cumulative impacts resulting from incomplete evaluation.
- If we limited the emissions measured to those we have the most science on, then we might be missing some significant sources of emissions.

- Reduces significant mitigation opportunities because draws what is measured so natrrowly.
- Prevents option of choosing less GHG rich material or preventing more GHG intense activity.
- Likely will not be able to reach state GHG reduction goal since the goals are based on total GHG emissions. It would be difficult to input only a partial analysis (narrow option) and compare it with the goal.

B. Intermediate Inventory

Physical processes that correspond to only part of the processes that happens off-site but that are necessary if want the activity to exist under its present form.

1. Emissions directly and measurably attributable to construction and operation that happen within the boundaries of the activity examined: VMT in course of work or directly related to project, equipment use, on-site fuel and energy use, on-site industrial process emissions, on-site land use changes, etc.)

2. Include emissions that corresponds to part of project processes that happens off-site but that are necessary if want activity to exist under its present form (home-office commuting of employees, road, sea, air freight to customers, or for company, emissions arising from the transportation of the clients to the store, generation of electricity, etc.)

C. Broad "Overall" Inventory

Physical processes wherever located that enable project proponent to pursue activity.

Has widest possible view of emissions and presents greatest number of opportunities for reducing them.

1. Emissions directly and measurably attributable to construction and operations that happen within the boundaries of the activity examined: VMT in course of work or directly related to project, equipment use, on-site fuel and energy use, on-site industrial process emissions, on-site land use changes, etc.)

2. Include emissions that corresponds to part of project processes that happens off-site but that are necessary if want activity to exist under its present form (home-office commuting of employees, road, sea, air freight to customers, or for company, emissions arising from the transportation of the clients to the store, generation of electricity, etc.)

3. Include expanded list of emissions that corresponds to part of project processes that happens off-site but that are necessary if want activity to exist under its present form: a) emissions linked to manufacturing of products and materials used, b) emissions linked to construction of buildings occupied, c) emissions

linked to transportation of supplies used, and d) emissions related to end of life treatment of waste produced/used directly (waste puts in garbage) and indirectly (packaging used by company)

Advantages of Broad

- Provides a fuller picture of a projects impact/benefits to environment.
- What is measured gets managed
- Goals/limits could be established at the plan level and some landscape-level impact analysis would be broadly applied at that point, and subsequent project specific SEPA work would incorporate by reference.
- Responds better to SEPA's requirement to understand the significant impacts of a proposal and to WAC 197-11-080. (FG/PB)

Disadvantages of Broad

- It is probably harder to measure and account for avoided emissions.
- If the bar is set too low for mitigation, then a broad approach to county emissions would trigger it.
- Doesn't help with the typical project–level analysis. Not clear what baseline would be ("BAU") nor what would be significant impact(s). How would mitigation on a landscape level be enforced at the project level?
- May be difficult to fit the plan-level model.
- There may not be enough credible and readily available science to model, estimate for the purposes of SEPA (WAC 197-11-080), or accurately document emissions from all sources or all upstream and downstream adjustments or carbon sinks and carbon storage.

Other Considerations

- Be mindful of how the information is used or applied. Some jurisdictions may just issue N/A. Seattle and King County may be at the other end of the spectrum. Of course, this gets into other issues, but they are related.
- Would "broad" analysis duplicate climate change efforts/policies being developed within efforts of GMA IWG?
- Can the double counting issue be addressed? What is its impact?

III. Possible Test Cases to Assess the Measurement Approach

1) 75 acre timber sale in area of long-term timber management using same harvest techniques and vehicles as before 1990 or as currently in use. (No new GHG emissions to report as long as replanted to long term forest use?)

2) 75 acre timber sale converting to 25 three-acre residential parcels.

3) DNR Forest Plan for _____ State Forest

4) New 100-unit housing development in a currently-forested area in Forks

5) New 100-unit housing development in densely populated city infill area

6) New furniture factory in Ephrata

7) Spokane County Comprehensive Plan

8) New petroleum refinery in Skagit County

9) New solar panel/wind turbine manufacturing plant in Skagit County

10) Wind Farm in Walla Walla

11) Expansion of existing Port of Tacoma marine terminal